



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/581,193

06/01/2006

Tetsuya Murakami

1560-0459PUS1

3562

2292 7590 11/14/2008
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

KNUTSON, JACOB D

ART UNIT

PAPER NUMBER

3611

NOTIFICATION DATE

DELIVERY MODE

11/14/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/581,193	Applicant(s) MURAKAMI ET AL.	
	Examiner JACOB KNUTSON	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/01/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **1 – 5 are** rejected under 35 U.S.C. 102(b) as being anticipated by **Kodaira (US 6,427,799 B1)**.

For claim **1**, Kodaira describes a vehicle steering apparatus comprising: a housing **2** for supporting coaxially to a steering shaft **2** (rack shaft); a rotating cylinder **11** (armature shaft) that is provided with a screw mechanism **3** constructed between itself and said steering shaft for moving an axial direction for the purpose of steering and that is rotated by transmission from a steering motor is constructed in a separated form consisting of first **A** and second housings **B** fit to each other by spigot-joint fitting on an outer side of a retaining part of a thrust bearing for thrust-supporting said rotating cylinder, wherein a gap **38** (caulking groove) is provided in a part that constitutes a part of the spigot-joint fitting part of said first and second housings and that is located on an outer side of a fixing nut **19** (nut section) screwed into said retaining part in order to apply a tightening force on said thrust bearing from one side.

For claim **2**, Kodaira describes a vehicle steering apparatus wherein said screw mechanism is a ball screw mechanism **3** constructed by engaging via a large number of

Art Unit: 3611

balls **31**, a screw groove formed in an outer periphery of said steering shaft with a screw groove formed in an inner periphery of said rotating cylinder as shown in Fig. **2**.

For claim **3**, Kodaira describes a vehicle steering apparatus further comprising: an escape stopping ring **32** (bearing holder ring) that contacts with an end face of said fixing nut from an opposite side of said thrust bearing.

For claim **4**, Kodaira describes a vehicle steering apparatus wherein said thrust bearing is a twin angular contact ball bearing **4** having a common outer race tightened by said fixing nut.

For claim **5**, Kodaira describes a vehicle steering apparatus wherein said thrust bearing is a shield bearing provided with a shield member on both sides of rolling elements as shown in Fig. **2**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over **Kodaira (US 6,427,799 B1)** as applied to claims **1** above, and further in view of **Cheng (US 6,155,376)**.

For claim **6**, Kodaira does not describe a vehicle steering apparatus wherein said rotating cylinder has, in an outer periphery, a gear wheel that engages with a pinion of

Art Unit: 3611

an output shaft of said steering motor. Cheng does describe a vehicle steering apparatus wherein said rotating cylinder **70** (ball nut assembly) has, in an outer periphery, a gear wheel **112** (first gear) that engages with a pinion **114** (second gear) of an output shaft **118** of said steering motor.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the gear wheel and pinion of Cheng with the steering assembly of Kodaira to allow for the ease of transferring force from the motor to the rotating cylinder.

For claim **7**, Kodaira does not describe a vehicle steering apparatus wherein said gear wheel has resin gear teeth as stated in column **3**, lines **52 - 59**. Cheng does describe a vehicle steering apparatus wherein said gear wheel has resin gear teeth.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use resin gear teeth of Cheng with the steering assembly of Kodaira to allow for a transfer of force without slippage.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Knutson whose telephone number is 571-270-5576. The examiner can normally be reached on Monday to Thursday, 6:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leslie Morris can be reached on 571-272-6952. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JK/

November 10, 2008

/Paul N. Dickson/
Supervisory Patent Examiner, Art Unit 3600